To: Allen Morris
Re: Victor 9000 & DP101

Running DP101 produces the following error message:

    Error in number of sectors per cluster

        "   "   "   bytes per sector

    Illegal number of FATS: (0 on flooppy)
                            (32 on hard disk)

    The data in the boot area is not the same as returned by DOS
    function 54.

I show function 54 to be "Get verify status - returned in AL"
assembling and running:

        MOV AH,54
        INT 21
        INT 20

returns "0" in AL

Getting out my friendly set of disk tools, I find the following
data that may be of help.

	Hard Disk(C)	Floppy(A)
Drive No	2	0
Unit	2	0
Sector Size	512	512
Cluster Size	16	4
Media Description By	00	01
Available space for DATA	2497 Clusters	594 Clusters
	20455424 Bytes	1216512 Bytes
Reserved Sectors	1	1
File Allocation Tables	2	2
Sectors per FAT	8	2
Directory Sectors	20	8
Max. Directory Entries	312	128

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The following data is from the Victor Tech Ref Manual

MS-DOS allocates space on a single-sided diskette (SS) and a
double sided (DS) diskette as follows:

Track 0 Sector 0   Disk Label
        Sectors 1-2   Two copies of the FAT, two sectors per
                        FAT (SS)
        Sectors 1-4   Two copies of the FAT, two sectors per

```
                        FAT   (DS)
       Sectors 3-10     Directory (SS)
       Sectors 5-12     Directory (DS)
       Sectors 11-      Data Region (SS)
       Sectors 13-      Data Region (DS)
```

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Victor 9000 Hard-DIsk Label Format

FIELD NAME   DATA   TYPE CONTENTS

Label_Type   WORD   0000=unqualified
                                    0001=Current Revision

Device_ID   WORD   0001=current revision

Serial_number   Byte(16)   ASCII

Sector_Size   WORD   512

IPL_VECTOR
    Disk Address   DWORD   Logical Address
    Load_Address   WORD   Paragraph Number
    Load_Length   WORD   Paragraph Count
    Cod_Entry   PTR   Memory Address

Primary_Boot_Volume
                        WORD   Virtual Volume #

Control_Parems   BYTE(16)   (For Tandem TM603SE)
    # Cylinders   BYTE(Hi)   00H
                        BYTE(lo)   E6H (=230)
    # Heads   BYTE   06H (=6)
    1st reduced-   BYTE(Hi)   00H
    current cyl.   BYTE(Lo)   80H (=128)
    1st write-   BYTE(Hi)   00H
    precomp cyl.   BYTE(Lo)   80H (=128)
    ECC Data burst   BYTE   0BH (=11)
    Options   BYTE   02h (=2)
    Interleave   BYTE   05H (=5, note that 0 means 5)
    Spares   BYTE(6)   00H

Available_Media_List
    Region_Count   BYTE   Number of Regions
    Region_Descr   (var)   Variable by region count
    Region_PA   DWORD   Phisical Address
    Region_Size   DWORD   Block Count

Working_Media_List
    Region_Count   BYTE   Number of Regions
    Region_Descr   (var)   Variable by region count
    Region_PA   DWORD   Phisical Address
    Region_Size   DWORD   Block Count

```
Virtual_Volume_List
        Volume_Count    BYTE        Number of Virtual Volumes
        Volume_Address  DWORD    .  Virtual volume label Logical
                                    Address
```

The above table describes those elements found in the hard-disk
label, following is a discussion of the meaning of the entries
themselves:

   *   Label Type - this defines the state of the driver
        layout and the revision number of the label

   *   Device ID - Classification identifying the arrangement,
        for example, the drive Mfg, controller revision number.
        This allows for the identification of compatible
        controller/drives.

   *   Serial Number - the serial number of the unit is stored
        here.

   *   Sector Size - the physical atomical unit of storage on
        the media

   *   Initial Program Load Vector (IPL) - this is a
        descriptor identifying the boot program and it's
        location on disk. This information is generated from
        the primary boot volume label via the utility HDSETUP.

        *   Disk Address - The logical disk address of the
             boot program image

        *   Load Address - the paragraph address of the memory
             where the boot program is to load. A zero entry
             indicates a default load at the highest RAM
             location.
        *   Load Length - The length of the boot program in
             paragraphs.
        *   Code Entry - a long memory address of the starting
             entry of the boot program. segment of zero
             defaults to the segment of the loaded program.

   *   Primary Boot Volume - the logical address of the
        virtual volume label containing the IPL vector and
        configueration information.

   *   Controller Parameters - a list of controller dependent
        information, for use in device reset and configuration.

   *   Available Media List - a list of permanent useable
        areas of the disk. This is derived from the available
        media list and from the format function of the HDSETUP
        utility.

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            *      Physical Address - the disk address of the region
            *      Region Size - the number of physical blocks in the
                   region.

      *      Working Media List - a list of the working areas of the
             disk.  This is derived from the AVailable Media List
             and from the format function of the HDSETUP utility.
             *      Physical Address - disk address of the region
             *      Region Size - the number of physical blocks in the
                    region

      *      Virtual Volume List - a list of the logical disk
             addresses of all virtual volume labels.
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Victor 9000 Hard-Disk Virtual Volume Label Format

The Virtual Volume Label provides information on the structure of
the Virtual Volume. Generally the operating system references
this label, while the HDSETUP utility will create and reference
it. The Virtual Volume Label appears as follows:

```
FIELD NAME                 DATA       TYPE CONTENTS

Label_Type                 WORD       0000=nul
Volume_Name                BYTE(16)   ASCII
IPL_Vector
      Disk Address         DWORD      Virtual Address
      Load_Address         WORD       Paragraph Number
      Load_Length          WORD       Paragraph_Count
      Code_Entry           PTR        Memory Address

Volume_Capacity            DWORD      # of physical blocks
Data_Start                 DWORD      Virtual Address
Host_Block_Size            WORD       MS-DOS    = 512 bytes
Allocation_Unit            WORD       # of physical blocks
Number_Of_Directory_Entries
                           WORD       Entry count
Reserved                   BYTE(16)   Future expansion - set to nulls

Configuration_Information
      Assignment_Count     BYTE # of assignment mappings
      Assignment                (var) Variable by assignment count
      Device_Unit          WORD       Physical Unit Number
      Volume_Index         WORD       Index into virtual volume list
```

The above table describes those elements found in the hard-disk
Virtual Volume label, following is a discussion of the meanings
of the entries themselves.

      *   Label Type - this defines the type of operating
             enviorment that the virtual volume is configured for.
             It is used for type checking when assigning volumes to

drives.

*   Volume Name — the name of the virtual volume as defined
        by the user.

*   Initial Program Load Vector — this is a descriptor
        identifying the boot program and it's location within
        the virtual volume. This field is used to generate the
        IPL vector on the drive label when configuering the
        primary boot volume.
        *   Disk Address — the virtual disk address of the
             boot program image.
        *   Load Address — the paragraph address of the
             memory where the boot program is to load. A zero
             entry indicates a default load to the highest RAM
             location.
        *   Load Length — the length of the boot program in
             paragraphs
        *   Code Entry — a long memory address to the starting
             entry of the boot program. Segment of zero
             defaults to the segment of the loaded program.

*   Volume Capacity — the number of actual blocks that
        comprise the virtual volume.
*   Data Start — the offset in blocks into the virtual
        volume for the start of the data space.
*   Host Block Size — The atomical unit used by the host in
        data transfer operations.
*   Allocation Unit (AU) — this operating system dependent
        field means the storage allocation size used by the
        host in the virtual volume. It is used in determining
        disk parameter tables and disk definitions.
*   Number of Directory Entries — this operating system
        dependent field means the number of entries in the
        hosts directory. It is used in determine disk parameter
        tables and disk definitions.
*   Configueration Information — a list of the drive
        assignments for a system at boot time. It is used to
        map logical drives to virtual volumes. This filed is
        referenced via the label of the booted drive.

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The above spelling errors are mine — not Victors. Besidex the
memap you downloaded, this should give you all the info I can
fins on the Victor disks.

Victor does have their own Super-Bios which I will upload also.

If you need any additional information, please let me know and
I'll see what I can find. My home tel is 349-3602 or leave word
here.

Franz Hirner